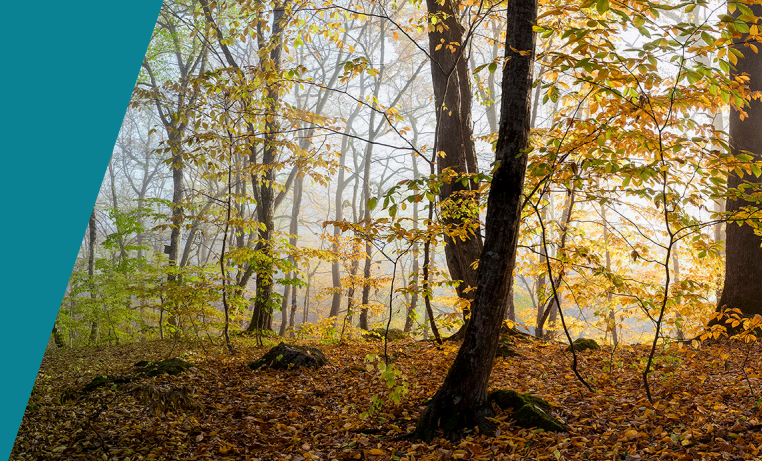
ANNUAL 2021



CLIMATE TRENDS AND VARIATIONS BULLETIN

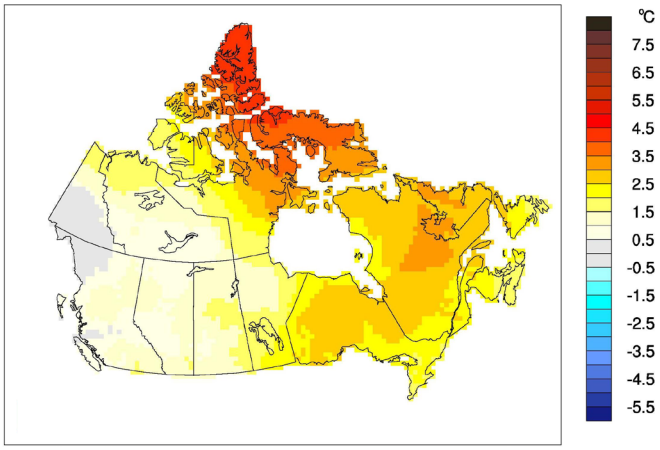
This bulletin summarizes recent climate data and presents it in a historical context. It first examines the national average temperature for the season and then highlights interesting regional temperature information.

Over the past decade, precipitation monitoring technology has evolved and Environment and Climate Change Canada and its partners implemented a transition from manual observations to using automatic precipitation gauges. Extensive data integration is required to link the current precipitation observations to the long-term historical manual observations. The update and reporting of historical adjusted precipitation trends and variations will be on temporary hiatus pending the extensive data reconciliation, and will resume thereafter. ECCC remains committed to providing credible climate data to inform adaptation decision making, while ensuring the necessary data reconciliation occurs as monitoring technology evolves.

NATIONAL TEMPERATURE

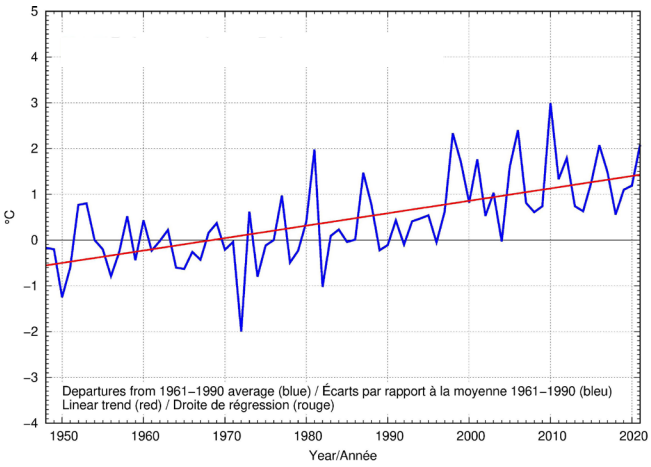
The national average temperature for the year 2021 (January to December) was 2.1°C above the baseline average (defined as the mean over the 1961–1990 reference period), based on preliminary data, which had ranked the 4th warmest observed since nationwide recording began in 1948. The warmest year occurred in 2010, when the national average temperature was 3.0°C above the baseline average. The coolest year occurred in 1972, when the national average temperature was 2.0°C below the baseline average. The temperature departures map shows that most of Canada experienced temperatures at least 1.0°C above the baseline average. Temperatures more than 2.5°C above the baseline average were recorded in parts of northern and most of eastern Canada and exceeded 3.5°C above the baseline average in the most northern parts of the Arctic archipelago. Annual temperatures were close to the baseline average in the southern areas of Yukon and northern British Columbia.

TEMPERATURE DEPARTURES FROM THE 1961–1990 AVERAGE – ANNUAL 2021



The time series graph shows that annual temperatures averaged across the country have fluctuated from year to year over the 1948–2021 period. Since 2005, the averaged annual temperatures have remained above the baseline average. The linear trend indicates that annual temperatures averaged across the nation have warmed by 1.9°C over the past 74 years.

ANNUAL NATIONAL TEMPERATURE DEPARTURES AND LONG-TERM TREND, 1948–2021

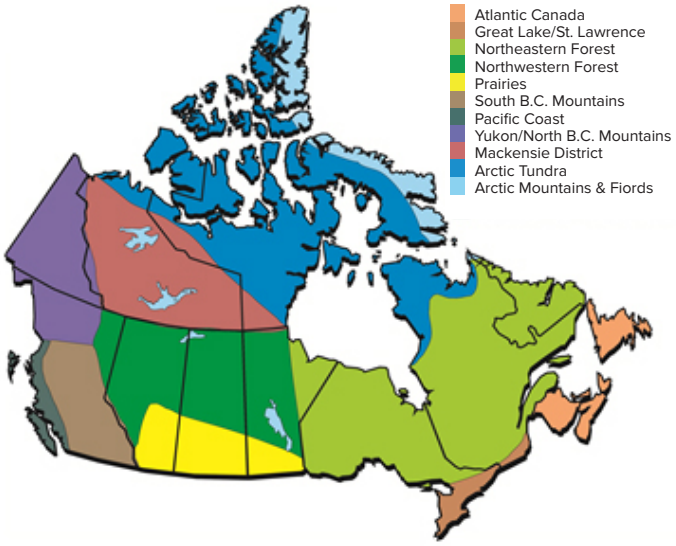


REGIONAL TEMPERATURE

When examined on a regional basis, the average annual temperature for 2021 was ranked among the 10 warmest on record, since 1948, for five of the eleven climate regions. These regions were: the Arctic Mountains and Northeastern Forest (both 2nd warmest at 3.2°C and 2.6 °C respectively above the baseline average); Atlantic Canada and Great Lakes/St. Lawrence (both 3rd warmest at 2.1°C above the baseline average); and the Arctic Tundra (4th warmest at 2.9°C above the baseline average). Average annual temperatures for 2021 were not ranked among the 10 coolest on record, since 1948, for any of the eleven climate regions. Average annual temperatures for all eleven climate regions exhibit positive trends over the 74 years of record. The strongest regional trend (+2.7°C) was observed in the Mackenzie District region, while the weakest trend (+1.0°C) was found in the Atlantic Canada region. A table listing the regional and national temperature departures and rankings from 1948 to 2021 and another table summarizing regional and national trends and extremes summaries are available upon request at btvc-ctvb@ec.gc.ca.

Please note that the latest generation of CANGRD has now been adopted in the analyses of the Climate Trends and Variations Bulletin (CTVB). For more information, please visit the CTVB homepage.

THE MAP OF CANADIAN CLIMATE REGIONS



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